

Hesiod's Theory of Economic History

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In verses 109-201 of "Works and Days" Hesiod develops a narrative of the past as well as the current and future developments of the human race. In this paper, this description is interpreted as a theory of economic history. Actually, Hesiod puts forward four stages of economic history, calling them races (γένος). However, he inserts a race of heroes, which includes all those who fought in the battle of Troy and the Seven Against the Thebes. He also mentions another race which will come after the race that he himself was living. Even though in the relevant literature five Hesiodic races are mentioned, Hesiod made reference to six. Four in the past, one in the present and another one positioned in the future. Past, present and future is what history is all about and therefore an important part of economic history.

Introduction

This belongs to a tetralogy of papers I have written to examine some facets of Hesiod's economic analysis. In Papanikos,¹ I examine the *Work and Days* as an economic textbook; in Papanikos,² I provide an overview of Hesiod's place in the economic literature; and in Papanikos,³ I look at the most important of Hesiod's economic contribution, namely his theory of scarcity. This paper is devoted to Hesiod's theory of economic history, developed primarily in verses (lines) 109-201 of *Works and Days*. His theory of economic history relates very much to his theory of scarcity-abundance.

I organize this paper into ten sections, including this short introduction. The next two sections define history and economic history. The fourth section makes some introductory comments on Hesiod's theory of economic history. In section five, the Golden Race is presented, which is characterized by abundance of products so that men and women do not work and enjoy their lives living and dying happily without facing scarcity. The Silver Race is presented in section six with some remarks aiming at interpreting what Hesiod really meant by this stage of human development. The Bronze Race—which historically coincides with the Troy expedition and the Seven Against Thebes—is investigated in section seven. However, to honor these heroes who fought in these two wars, Hesiod inserts a

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1. G. T. Papanikos, "Works and Days," *Athens Journal of Business and Economics* (forthcoming).

2. Papanikos, "Hesiod's Place in the Economics Literature," *Athens Journal of Business and Economics* (forthcoming).

3. "Hesiod on Scarcity," *Athens Journal of Business and Economics* (forthcoming).

separate race between the Bronze and the Iron Race; the former is mentioned in section seven since it is part of the Bronze Race and the latter, which coincides with Hesiod's lifespan, is analyzed in section eight. In the same section, the Post-Iron Race is also examined. The ninth section compares the sic races. In the tenth section the paper concludes by posing some testable hypotheses based on Hesiod's theory of economic history.

On the Definition of History

History deals with the future, using the past, in order to be useful to present generation.⁴ Great historians are those who write such a diachronic history. Thucydides was such a great historian. He purposefully wrote a history to be used by all future generations in order to avoid past mistakes, which, as he so astutely remarked, are embedded in human nature. In his own words, the purpose of writing about past events (τῶν τε γενομένων) is:⁵

All those, who want a clear view of the past and about similar events which will happen due to human nature, find what I write useful is sufficient for me. This may be an everlasting accomplishment instead of being heard in a contest and immediately forgotten.

ὅσοι δὲ βουλήσονται τῶν τε γενομένων τὸ
σαφὲς σκοπεῖν καὶ τῶν μελλόντων ποτὲ αὐθις
κατὰ τὸ ἀνθρώπινον τοιούτων καὶ
παραπλησίων ἔσεσθαι, ὠφέλιμα κρίνειν αὐτὰ
ἀρκούντως ἔξει. κτήμα τε ἐς αἰεὶ μᾶλλον ἢ
ἀγώνισμα ἐς τὸ παραχρῆμα ἀκούειν
ξύγκεται.

[Thucydides, *Peloponnesian War*, 1, 22]

Hence, according to Thucydides, "good" history is writing about past events in order to teach current and future generations to avoid the same mistakes, which are repeated because of human nature.⁶ It is not an "objective" history, but

4. I have dealt with history in a number of papers and books; see: Papanikos, *What is History? An Assessment of Carr's Monograph* (Athens: Athens Institute for Education and Research, 2020); Papanikos, *The Use of European History: Lessons for the 21st Century History* (Mimeo, 2005); Papanikos, *The Use of History as a Tool of Policy-Making* (Mimeo, 2006); Papanikos, and N. C. J. Pappas, "European History: Lessons for the 21st Century," Essays from the *3rd International Conference on European History* (Athens: Athens Institute for Education and Research, 2006). Albert Einstein, in one of his many famous quotations said, "The distinction between past, present, and future is only a stubbornly persistent illusion." If I dare to add something to what the Great Master of the Universe said, is it that it is a very useful illusion. In economics, usefulness (utility) is always what counts.

5. This is my adaptation of the ancient writings throughout the text. It is not a philological translation, but my understanding of the text. It is my received view.

6. Thucydides' work goes beyond a simple report on a war. There are many examples which demonstrate this, such as Pericles' *Funeral Oration*, and in many other such insertions of speeches and dialogues. Of current interest is people's attitudes towards pandemics for which Thucydides devoted a couple of pages to describe the pandemic which hit Athens

a didactic history, similar to Hesiod's book of *Works and Days*. Thucydides hoped that his history was such a "good" history. However, people do not appreciate "good" history. Thucydides was aware that the masses of people (listeners) do not appreciate the truth; they prefer myths:

... and perhaps listening to non-mythical stories seems unpleasant ... καὶ ἐς μὲν ἀκρόασιν ἴσως τὸ μὴ μυθῶδες αὐτῶν ἀτερεπέστερον φανεῖται
[Thucydides, *Peloponnesian War*, 1, 22]

This may explain why humans, after all, have a very short memory span and do not learn from their past mistakes. According to Thucydides, the reason is very simple. It is in human nature to prefer easy explanations such as mythical stories instead of toiling in seeking to find the truth.⁷

Because many prefer a tireless search for the truth and rather lean to whatever is readily available οὕτως ἀταλαίπωρος τοῖς πολλοῖς ἡ ζήτησις τῆς ἀληθείας, καὶ ἐπὶ τὰ ἐτοῖμα μᾶλλον τρέπονται
[Thucydides, *Peloponnesian War*, 1, 20]

Learning requires work and people avoid it. Similarly, scarcity requires hard work, as Hesiod so masterfully explained it. Undoubtedly, Thucydides' history had the potential to serve exceptionally well the needs of all future generations. Even today, his history is used to avoid what some people think as inevitable, i.e., a trade war or, even worse, a military war between the USA and China. Thucydides explained that a grand war occurs because an upcoming power (e.g., China) challenges the global leadership of an existing world power (e.g., USA). In 2012, Graham Allison, in a newspaper article, called a situation like this a "Thucydidean Trap".⁸

Hesiod himself thinks that wars play an important role in determining the destiny of the human race. He blames wars as being responsible for the disappearance of previous human races, and in any case in contributing to the

during the end of the first year of the Peloponnesian War (430 BCE) and lasted for about five years. On this latter issue and its comparison with the current plague of COVID-19, see Papanikos, "Thucydides and the Synchronous Pandemic," *Athens Journal of History* 7, no. 1 (2020b): 71-94.

7. This is true in economics as well where many economists are satisfied with mythical stories of how the economy works, or with excellent mathematical models of how a mythical (never existed) economy works. The General Equilibrium Models are excellent examples of how a mythical economy works, pretty much like the Golden Age or Race of Hesiod. This does not mean that these myths are not useful. Both can be used to "measure" the distance of a particular reality from something that some people think is best or optimal.

8. G. Allison, *Thucydides's Trap has Been Sprung in the Pacific* (Financial Times, 21 June 2012).

demise of the youth. Even though humans can be blamed, Gods' rage plays a role as well.⁹ Today, a war can exterminate the entire human race pretty much like what Hesiod thought. He was afraid that during his own period of the Iron Race or the Post-Iron Race that the human race may disappear from the face of the earth.

According to Hesiod's time framework, we may still live in the Iron Race. However, one may argue that we have entered into the post-iron era since the 18th century. Like Thucydides, Hesiod's history, as outlined in *Works and Days* to be presented in the following sections of this paper, serves the needs of current and future generations. Hesiod talks not only to his generation, but warns of what may happen to the human race in the future, i.e., its possible total extinction, as happened in the past. These fears might have seemed dystopian a few centuries ago, but in the last hundred years have become a pragmatic outcome given that humans have created the means of their own destruction.

On the Definition of Economic History

Economic history serves the same purpose as history, but focuses on economic phenomena of the past, of which scarcity was, is and will be the most important one. Without scarcity there is no economic reality to analyze and therefore no economic history. According to Hesiod's economic theory, scarcity was the only concern of people after the first human race ceased to exist.

I define here economic history along the lines of Thucydides' definition of history. Economic history is the analysis of future economic events, using past economic experiences, in order to serve the economic needs of the current generation. Notice that if the current generation's utility function depends on the utility of its offspring, then the interest of the current generation is in line with the interests of the future generations. This is what is meant by "good" economic history, i.e., a useful history.

The word "history" is used in economics in many other ways. It should be noted that economic history is the history of economies and not the history of economics or the history of economic thought. Furthermore, economic history should not be confused with the German historical school of economics, which was developed in the 19th century, primarily by Gustav von Schmoller and Max Weber. This was an approach to explain economics and not an economic history. Accumulated writings about economic historical events are futile if there is no rule in which to measure them against and compare, i.e., if there does not exist a

9. Many times, Hesiod combines the real (e.g., bad strife between humans such as a war) with the metaphysical (e.g., Gods' strife). My interpretation of such explanations is that Hesiod knows that some developments are unexplained. Then he invokes the *deux ex machine* to provide an explanation.

solid theoretical framework. In other words, economic history is not another approach to economic analysis, but all good economic analyses (theories) should be relevant, i.e., they should refer to a specific historical reality; otherwise, it does not deal with human behavior. Economic history deals with people's economic behavior in the past. Thus, any good economic theory should use good economic history.

Another method of analyzing the past was suggested by Karl Marx. His historical materialism or the materialistic conception of history relates very much to Hesiod's economic history. According to Marx, historical materialism is a methodological approach to look at the past and project the future course of events. This is exactly what Hesiod did. He looked at past chronological developments and classified them into six stages, epochs, periods, ages, races. Similarly, Marx looked at the past and classified them into six chronological periods or historical stages of systems of production: primitive communism, slavery, feudalism, capitalism, socialism and communism. The first can be compared with Hesiod's Golden Race. The following three stages can be compared with the Bronze and Iron Age and the last two with the Post-Iron Age. However, Marx emphasized the class struggle as the prime mover of history. Hesiod provided a more general explanation which is based on the scarcity of the means of life, which may result in a class struggle as postulated in Papanikos.¹⁰ The two approaches are not in contradiction. Hesiod's is more persuasive and general. Economic problems such as scarcity can be solved in many ways, including in a class struggle. Another solution is a class-neutral technology. For example, historically, capitalism has survived (so far) not because it eliminated class struggles, but because it revolutionized the mode of production through technologies and innovations which improved the conditions of the lowest classes, i.e., reduced scarcity. If an unequal society doubles its means of living because Prometheus found a magic stick without changing the relevant distribution of the means of life, the scarcity problem (absolute poverty) for the poorest (proletariat) is cut in half. I think this pretty much describes what has been happening in the advanced capitalist countries since Marx's writings. History teaches us that it is the scarcity that is the mover of historical developments, which in some cases manifests itself as a class struggle, but not always. Another manifestation is wars between two independent states, races, cultures, religions, etc.

Past experience is useful to verify even the most controversial theses. If past experience is depicted by statistical data, then this sub-field of economic history is called cliometrics or new economic history.¹¹ Clio was one of the nine Muses who

10. Papanikos, "Hesiod on Scarcity," forthcoming.

11. In 1993 two economic historians, Robert William Fogel and Douglas Cecil North were awarded the Nobel Prize in Economics for their "research in economic history". They created a new strand of economic research called new economic history or

protected arts and sciences. Clio was the Muse of history. Hesiod himself starts his *Works and Days* with an invocation to the nine Muses. One of the "hot" topics of economic analysis is economic growth—so much so that Fogel stated that, "[T]he central interest of the new economic historians is still the description and explanation of economic growth."¹² Economists study the past of economic growth because they want to take current actions (e.g., build infrastructure such as railroads or invest in human capital) which can contribute to future economic growth. Why? Because the past has shown that the economic future of any country is shaped by investing in infrastructure or in education of the present generation.

Hesiod was not only a good economist, but a good economic historian as well.¹³ As Solow¹⁴ pointed out, the division of labor between doing economics and doing economic history is limited by the extent of the market. Hesiod had no other choice, but to be an economist and an economic historian because his market was completely underdeveloped. He was the only one in the market for economists and economic historians in the 8th century BCE that we know of. Solow distinguishes these two roles as follows:

The economist is concerned with making and testing models of the economic world as it now is, or as we think it is. The economic historian can ask whether this or that story rings true when applied in earlier times or other places, and, if not, why not. So the economic historian can use the tools provided by the economist but will need, in addition, the ability to imagine how things might have been before they became as they now are.¹⁵

A note must be made on the sources of economic history because its subject matter should not be confused with the availability of information from different

cliometrics. Goldin defines cliometrics in very general terms as the, "... application of economic theory and quantitative methods to the study of history. The term marries the Muse of history—Clio—for measurement and was coined by Stanley Reiter, a mathematical economist then at Purdue University and a collaborator of two of the first cliometricians, Lance Davis and Jonathan Hughes." C. Goldin, "Cliometrics and the Nobel," *Journal of Economic Perspectives* 9, no. 2 (1995): 191.

12. R. W. Fogel, "The Reunification of Economic History with Economic Theory," *The American Economic Review* 5, no. 102 (1965): 93.

13. I agree with Rosenmeyer that Hesiod should be considered and as a historian, especially Hesiod's account of the five or six races discussed in this paper. My argument here is that he was an economic historian. Rosenmeyer cites a German work in 1924 by Meyer who was the first to point out the historical dimension of the five races, i.e., a history of human development. It is also an economic history. T. G. Rosenmeyer, "Hesiod and Historiography," *Hermes* 85, no. 3 (1957): 257-285.

14. R. M. Solow, "Economic History and Economics," *The American Economic Review* 75, no. 2 (1985): 328-331.

15. *Ibid.*, 331.

historical periods. All economic historians would love to have a full set of quantitative data from the origins of humanity until today. However, economic historians have no other choice but to rely on archaeological and anthropological evidence.¹⁶ As Solow says in the above quote, economic historians must have the “ability to imagine”. Hesiod did have the gift of great imagination as his book on *Theogony* testifies. Hesiod was a good economist and a good economic historian because not only was he “making and testing models” of his economic world, but, most importantly, he had an outstanding ability “to imagine how things might have been before they became” were during his 8th century BCE world. The Golden Race, the first ever race of humanity, is a masterpiece of how things “might have been”. It most probably describes what many economic historians allege that in the beginning of history people were living in a “paradise”, i.e., they were food gatherers rather than food producers.

Cliometrics is a tool and not a method of writing history because we cannot write the economic history of ancient Athens by simply using the tool of cliometrics. Data did not survive even though many data existed to make decisions for which we have written sources; there are many books that describe the economy of ancient Athens based on data available at the time. Hesiod himself used quantitative data, and therefore can be considered as the first cliometrician. It can be said that some statistical (econometric-empirical) model must have been in his mind (and not in his imagination) when he gives answers to very specific questions that only econometrics can provide today. For example, at what age do farm-laborers maximize their productivity? When Hesiod answers that it is at 40 years old, it is logical to assume that he used some sort of a quantitative evidence: time series from his own farm or cross sectional from his own and other farms or even panel data. Casual experience is not sufficient. Experimental experiences¹⁷ (trials and errors) are needed. Such experiments generate data.

16. This is true for cliometricians as well. For example, looking at cemeteries of a given period of the long past, inferences can be made about wealth distribution.

17. This is similar to what Schumpeter calls a historical experience or what Solow describes as “quantitative judgments” and “historical narratives”. J. A. Schumpeter, *History of Economic Analysis* (Great Britain: Allen & Unwin (Publishers) Ltd, 1954), 11; Solow, “Economic History and Economics,” 1985.

Hesiod's Economic History

Hesiod had a good grasp of economic history. His theory of economic history exemplified the past development of humanity which he extended into the future in six stages. He called them races (*γένος*), but later the word was translated as "ages". It is the purpose of this paper to present Hesiod's theory of economic history. For Hesiod, the use of metals is a characteristic of each race.¹⁸ They are each named after the metal they used for the first time. This demonstrates his theory of economic history with myths, allegories, parables etc., which is consistent with his methodology and moral concerns of the role of knowledge. It is consistent with the above quotation by Solow that good economic historians should have a good "ability to imagine".

Hesiod's theory of economic history—depicted here as a chronological development of six races—is mainly explained in lines 109-201 of the *Works and Days*. However, useful citations exist in *Theogony* as shown in this paper. Hesiod sees the human historical development as going through a series of six stages which are identified with four metals: gold, silver, bronze and iron. Between the Bronze and the Iron Races, he masterfully inserts another stage, that of the heroes who fought the wars in Troy and in the Seven Gates of Thebes.¹⁹ He also mentions that another stage of human development might follow after the Iron Race which here I call the Post-Iron Race. These six races constitute the backbone of Hesiod's economic history and are briefly examined in the following sections of the paper.

Before, however, a short note should be made at this point on the use of metals. Many classicists (by definition, non-economists, and of course non-economic historians) have doubted the literal use of metals to describe the different stages of economic history. They claim that these are parables or metaphorical descriptions of the moral characteristics of each race which helped Hesiod to allegorically demonstrate the stepwise degeneration of the human race.²⁰ This is not true. All races are named by the metal which describes the unique production process of each stage. Even the argument of the degeneration

18. As of coincidence, Adam Smith, who never cited Hesiod, used exactly the same metals to describe co-existent practices. Smith stated, "Different metals have been made use of by different nations for this purpose. Iron was the common instrument of commerce among the ancient Spartans; copper among the ancient Romans; and gold and silver among all rich and commercial nations." A. Smith, *The Wealth of Nations* (New York: The Modern Library Edition, 1937), 24. The same four metals are mentioned by Hesiod.

19. Most probably he inserted this stage of heroes to attract the interest of his audience. Didactic poems were recited in front of an audience at various occasions, e.g., contests and specific festivities.

20. See for example J. G. Griffiths, "Archaeology and Hesiod's Five Ages," *Journal of the History of Ideas* 17, no. 1 (1956): 109-119; and the discussion of H. C. Baldry, "Hesiod's Five Ages," *Journal of the History of Ideas* 17, no. 4 (1956): 553-554.

of races is not in accordance with Hesiod's stages because, as shown below, the trend is towards progress albeit with many and painful oscillations. Classicists also doubt whether Hesiod was the first to use the Golden Race to describe an initial old good condition of the human race.²¹ As explained later in this paper, if Hesiod was not the first to write about the happy beginnings of the human race, this reinforces the idea that he was writing a didactic book by using all available knowledge as is the case with any good textbook.

Recapitulating the above discussion, Hesiod's *Works and Days* includes a theory of economic history. He considers the metals and the technology to process them as the prime motivation of human development; progress or regress is a different matter. For example, the Golden Race was called golden because people were using gold and not the other metals. Similarly, the Silver Race was called as such because people of that time were using silver in addition to gold. And of course, when Hesiod refers to the Bronze and Iron Races, then it is more than evident that these are called as such because their products were made from these metals in addition to gold and silver which are still used for ornaments, and also, at the end of the period, for making coins. Thus, metals clearly depict the different production characteristics of each historical race. The first race was the Golden Race which is examined in the next section of this paper.

The Golden Race

Any textbook of economic history starts with the distinction between non-settled (nomadic) races and settled agriculture.²² Most economic historians assume that at a certain point in human history (e.g., 10,000 years ago) and in a certain area (e.g., Mesopotamia) people went from being food gatherers to becoming food producers, and from hunters they became herd raisers. Presumably, gathering seeds, vegetables and killing animals to feed and dress themselves people had it much easier than working hard on the land and herding their flock year-round. Nobody else has put this important transformation (some called it the first or Neolithic revolution) so eloquently as Hesiod did in his book. Hesiod starts with the first condition of the human race which he calls the Golden Race:

21. See P. Smith, "History and the Individual in Hesiod's Myth of Five Races," *The Classical World* 74, no. 3 (1980): 145-163. He examines various explanations of the myth and offers his own as well.

22. That is all those economic history textbooks which start from the beginning. Many textbooks start their "history" much later. There are historians who start European (economic) history from some dates other than ancient Greece without even bother to explain where the name "European" is coming from or what it means. I call them ignorant historians. Ignorance does not make one a good (economic) historian.

Golden was the first race of eloquent people created by the immortal Olympian dwellers	Χρύσειον μὲν πρῶτιστα γένος μερόπων ἀνθρώπων ἀθάνατοι ποίησαν Ὀλύμπια δώματ' ἔχοντες. [109-110]
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The Golden Age of humanity is characterized by a eudemonic way of living, similar to the one Gods lived in, without any pain or worries. In Hesiod's own words, in the Golden Race people:

...lived like gods worriless their soul was
away from pains and miseries

... θεοὶ δ' ἔζων ἀκηδέα θυμὸν ἔχοντες
νόσφιν ἄτερ τε πόνων καὶ οἰζύος [112-113]

A few lines before, he describes the Golden Race in comparison with all other races that followed these good old days as follows:

Before they lived the human races on earth
far away from misery and away from
unbearable pains
and without the serious illnesses, which gave
death to men

Πρὶν μὲν γὰρ ζώεσκον ἐπὶ χθονὶ φύλ'
ἀνθρώπων
νόσφιν ἄτερ τε κακῶν καὶ ἄτερ χαλεποῖο
πόνου
νούσων τ' ἀργαλέων, αἳ τ' ἀνδράσι κήρας
ἔδωκαν [90-92]

However, what was the reason for such a happy life? According to Hesiod, there was only one reason, and it was economic: there was no scarcity. On the contrary, there was a plethora (overabundance) of goods to satisfy material human needs. Everything was ready to be gathered and consumed, or as Hesiod puts it:

The arable land provided gifts of life
automatically many and plentiful

καρπὸν δ' ἔφερε ζείδωρος ἄρουρα
αὐτομάτη πολλόν τε καὶ ἄφθονον [118-119]

How much better can an economic historian say it in less than two verses that at an initial stage of human development people were food gatherers. No translation can depict the articulacy of the original text either in Modern Greek or in English. For example, my translation is different and I think better from an economist's point of view than in English or in Modern Greek. The word "ζείδωρος" is translated as wheat or grains or even food, but literally speaking it means that the land provides the gift (δωρος) of life (ζει). The word ἄρουρα means arable land and the word automatic (αὐτομάτη) is the key to the above quote. Hesiod uses the same word automatic (αὐτομάτη) to describe exactly the same thing as in its Modern Greek and English versions, i.e., without any human involvement (work). In other words, automatically the arable land provided the gifts of life (food), i.e., the means of life.

The Golden Race very much relates to the opposite of scarcity, i.e. abundance (πολλόν τε καὶ ἄφθονον). The Golden Race was living in a state of profusion. Therefore, there is nothing metaphorical or allegorical. It was literally economics

and had to do with the most important problem: scarcity of the means of living and not with the ethics of the people of the Golden Race. Of course, abundance and morality might be related because people commit many crimes when they are faced with acute scarcity. Thus, this was a perfect ethical race because they did not face the problem of scarcity. In the Golden Race there was no economic problem.²³

All those classicists who want to disentangle gold from the scarcity of the means of living should read these verses very carefully. Even in Modern Greek, there is an expression that goes back at least to the Byzantine years relating food and gold. The expression “*Τρώει με χρυσά κουτάλια*” means “he eats with golden spoons” is used for people who have everything in abundance (they are rich) and therefore they can eat as much as they want. Of course, there is another expression which gold is related to goodness. This expression goes back to ancient times: “*Έχει χρυσή καρδιά*”, which means “he has a golden heart”, i.e., he is kindhearted. Of course, Hesiod’s gold relates to food abundance necessary to live as he explicitly states it, and not relating it to people’s hearts.

It is not clear whether the adjective “automatic” in the above expression refers to the word *ἄρουρα* (meaning arable land) or to many (*πολλόν*) and abundant (*ἄφθονον*) gifts of life or wheat. One can argue that Hesiod masterfully puts the adjective in between and used the word *ἄρουρα* so it can emphasize that the land was automatically ploughed and automatically provided many seeds, which were abundant (more than sufficient) to feed this initial fortunate human population. It is only in this way that we can call them gifts of life. This interpretation prepares the reader with what Hesiod postulates for all the following stages of economic development when people had to toil to produce the means of their livelihood. They were not for free anymore, and people had to sweat to get them.

It is not clear how this Golden Race disappeared. Why would Gods want to harm this human race? What was this people’s sin? Hesiod uses his superb ability to imagine and invents a beautiful story: The Myth of Prometheus.²⁴ People were punished to live in scarcity because Prometheus stole the fire (knowledge and technology) from Gods. This beautiful story could be a good explanation of the disappearance of the happy days of the Golden Race if causality is reversed. People

23. Those who believe in the cyclicity of history may argue that since then the human race is making continuous improvements in the productivity of labor, which one day may lead to a new Golden Race where all goods will be produced automatically (pretty much the same way as during the first golden human race).

24. Why would Prometheus steal the fire (technology, knowledge) from Gods when people lived in abundance? Furthermore, why would Gods want to punish the entire humanity and not only Prometheus? As all myths, this one has its own internal inconsistencies and metaphysics. The most important point to remember is that, as in all economic history textbooks, the basic assumption about the initial condition is that men and women were food gatherers and they lived nomadically, which has an element of a happy way of living.

were forced to innovate (i.e., steal the fire) because of the appearance of scarcity. Thus, scarcity appeared and then people started to innovate and acquired useful knowledge. How did this happen? Hesiod did not give an answer. Today, we have abundant anthropological and archaeological evidence to complete Hesiod's beautiful story.

Most probably the transition from food gathering to food producing was the result of population pressures, which reduced the amount of food that can be freely gathered and the number of wild (non-domesticated) animals that can be freely hunted. Higher population brought more scarcity. These prehistoric races were forced by the need of scarcity to produce their food and domesticate as many animals as possible. However, this cannot be done without the use of tools. Thus, the production of tools started. Stone tools (Neolithic period) were easily made or easily found in nature. People started to think (i.e., innovate) of how they can increase production (i.e., make more fertile land available) and productivity (i.e., get more food from a given area of land).

Prometheus becomes an allegory to describe the production of new tools to increase production and productivity. Fire provides energy in the production process, which today as always has been the cause of many wars.²⁵ Hesiod did not have the evidence that modern economic historians²⁶ have from archaeologists and anthropologists. His Prometheus story is a masterpiece of what Solow called the ability of imagining. Prometheus' story is Hesiod's explanation that at a certain point of human development, the human race was forced to innovate to face food scarcities.

Actually, the Golden Race did not disappear from the cosmos, but only from the surface of the earth. According to Hesiod, its people became "good daemons". As is the case with many such concepts in the Hesiodic works, there are good and bad daemons, but these became good daemons "*δαίμονες ἀγνοί*" [122]. The interesting thing is the role of daemons. The noun daemon comes from the verb "*δαίομαι*" which means "mete out" or "distribute". According to Hesiod, these good daemons were instructed by Gods to guard the mortals and watch their behavior on earth and accordingly distribute wealth. These daemons of the Golden Race are called by Hesiod, wealth givers "*πλουτοδόται*". The interpretation of the

25. These issues have been examined in Papanikos, "Energy Security, the European Energy Union and the Mediterranean Countries," *Athens Journal of Mediterranean Studies* 3, no. 4 (2017): 341-354, and Papanikos, "Military Spending, International Trade and Economic Growth in the Mediterranean Basin," *Athens Journal of Mediterranean Studies* 1, no. 2 (2015): 187-194.

26. For example, North and Thomas use this evidence to describe exactly the same process as Hesiod did, using, of course, modern economic jargon. D. C. North, and R. P. Thomas, "The First Economic Revolution," *The Economic History Review, New Series* 30, no. 2 (1977): 229-241. Between their story and Hesiod's story, I prefer the latter because it is more concise and definitely more interesting, given that both describe exactly the same process (story) of human development in the pre-historic era.

word “πλουτοδοται” cannot be anything other than economic. However, does it mean that they provide to mortals the means of living such as a good crop (wheat), or is it something more than that? Good crops were the responsibility of the Goddess Dimitra. Hesiod wanted it to mean more than that by using the word “πλουτοδοται”. He identifies wealth with the people of the Golden Race. Gold was the most important store of value in archaic times. The people of the Golden Race can distribute what they possess, i.e., gold or in today’s economic jargon, money.

Summing up the above arguments, the Golden Race has received much attention. One aspect has been the metaphorical or literal use of the word “gold”. This has been already addressed above. Hesiod, by using gold, wanted to indicate that the Golden Race was rich and did not suffer from the economic problem of scarcity. Classicists may not understand it, but to an economist, the *Works and Days* is an economics textbook and metals imply economic value, economic status and a historical stage of economic development.

The second strand of this literature discusses the issue of whether Hesiod was the first to propose a Golden Race. This literature has no relevance to the arguments made here. The debate that Hesiod was not the first to talk about an initial stage of humanity, which can be called a paradise (golden age), not only does not belittle the originality of Hesiod’s work, but reinforces it. The originality of Hesiod’s work is not in the newness of his idea, but in that his book was the first textbook in which included a concise theory of economic history linked to the use of metals and therefore to technology. Hesiod provides an amalgam (synthesis) of the existing knowledge, which, of course, includes his own, both the empirical and the analytical gnosis, in a way that can be used to teach basic economic principles, including economic history. The reader should not forget that from the beginning Hesiod makes clear that his book is a didactic one. He wanted it to be used for teaching. All other interpretations are secondary.

The Silver Race

This is one of the most incomprehensive stages of Hesiod’s human development. This race was created by the Olympian Gods. However, it is not clear whether it co-existed with the Reign of Cronus, which is similar to the Golden Race. Hesiod mentions that this stage was worse, actually much worse, than the Golden Race, but gives no explanation as to why this was the case. He also states that the people of the Silver Race differ both in their body and their mind from the members of the Golden Race.

Second race, the silver, much worse after
was created by those who have their dwellings
in Olympus
not like the golden in both body and mind

Δεύτερον αὐτε γένος πολὺ χειρότερον
μετόπισθεν
ἀργύρεον ποίησαν Ὀλύμπια δώματ' ἔχοντες,
χρυσέω οὔτε φῆν ἑναλίγκιον οὔτε νόημα
[127-129]

Hesiod continues with a story which really does not make sense unless something is missing. This race cannot really connect with the previous or with the following races. Hesiod talks about foolish people (men?) who take one-hundred years to come to puberty, and once there they fight between themselves. They did not respect Gods and for this reason Dias destroyed them. The reason is not given. Hesiod states that some honor still exists for them even though their role is inferior to the Golden Race.

What is surprising though is that the mothers of these children with such a long childhood are favorably portrayed by Hesiod:

Hundred years the boy, the great fool, was brought and happily raised by a careful mother inside the house	ἐκατὸν μὲν παῖς ἔτεα παρὰ μητέρι κεδνῇ ἐτρέφετ' ἀτάλλων, μέγα νήπιος, ᾧ ἐνὶ οἴκῳ [130-131]
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The word κεδνῇ may mean careful, industrious, diligent, prudent, wise, etc. I translated the word παῖς as "boy". The mother is wise, but the sons are foolish. Hesiod calls the boy "big fool": μέγα νήπιος. As children, they lived long (100 years), but once they become adults, at the peak of their age, they lived only for a short period of time. No reason is given except that they were stupid and they fought between themselves.

One interpretation to this really awkward depiction of the Silver Race might be a myth that did not survive our time, but was well known during Hesiod's time. Hesiod again uses a myth like in the first race, but it is not clear how it can be interpreted. In this second stage of human development, women (mothers) played an important role, but not a role that can be related to the myth of the Amazons, who were aggressive and warlike. However, the Silver Race might relate to a belief that there was a stage in the human development where women had a leading (more important) role. It might relate to some sort of matriarchal social system. If this is what Hesiod means by the Silver Race, then it might relate to Pandora's story which Hesiod explains in both *Theogony* and *Works and Days*.

Some authors interpret Pandora's story as misogynic, which was used by Hesiod and others after him to justify the transition from a matriarchic to a patriarchic social system. I do not consider Hesiod misogynist at all. On the contrary, I consider him a realistic and an objective advisor to men. It should be kept in mind that *Works and Days* was written to advise his brother Perses, a man. When Hesiod states that there are good and bad women and his brother should marry a good woman, he simply states a fact of universal value. The whole story of the strife between the two brothers stipulates this basic ecumenical fact of life: there will always exist good and bad people. All his marital advice to his brother is quite the opposite from misogynic. However, this goes beyond the subject of this study.

A careless reading and interpretation of the Pandora's jar story, which was first developed by Hesiod in *Theogony*, seems to contradict this representation of a

wise (industrious) woman-mother mentioned in the Silver Race. The mother bears the boy and also feeds him. How? It is not clear. Does she provide the food? Does a mother-woman need men to bring food as definitely was the case in all races which followed the silver one? If people are food gatherers as opposed to food producers, are we safe to assume that men played a secondary role? According to this description, men remain boys (childish behavior) almost all their lives and once they become adults, they are exterminated either by fighting each other or by Gods. Thus, they cannot play any (economic) role apart from propagating the kind.

Thus, one interpretation could be that the Silver Race is related to that stage of human development when women had a more active role in raising children as well as collecting and preparing the food. If this is correct, then the Silver Race refers to some sort of matriarchy. The depiction of men as children might be a clever way of saying that women were dominant and men depended upon them for their food. Hesiod could have said that because he wanted to show that it was the fault of the men of the Silver Race that women had such a dominant role. Men of the Silver Race were incompetent.

If the Golden Race was ubiquitous as a description of the initial conditions of the human development mixed with an imaginary nostalgia, the matriarchic era might be a mixture of nostalgia and despise. Nostalgia, if matriarchy is identified with the mothers' role in raising children (especially the boys, can still be found in Greek society today, especially in small villages like Hesiod's. The affinity of boys-men to their mothers has been well-documented since antiquity,²⁷ despite men wanting to dominate and establish a patriarchic society. This might explain why Hesiod considers the Silver Race much worse than the Golden Race, but, on the other hand, not so bad because the members of this race do deserve some honor.

The famous Pandora's Myth may be related to the Silver Race of human development. One interpretation of this myth indicates the transition from a matriarchic to a patriarchic society. Pandora represents the matriarchic era. Women provide all the means of living.²⁸ This might be another explanation why the Silver Race is considered much worse than the Golden Race. The Pandora's myth is first examined by Hesiod in his *Theogony* without mentioning her name. This is done in the *Works and Days*. The two works are related in terms of the metals used by Gods to make Pandora attractive to men. Hesiod states in *Theogony*:

27. The role of mothers has become part of many tragedies and comedies in both ancient and modern Greek literature. Unfortunately, this has been portrayed in the international literature as the Oedipus complex. Oedipus married his mother but he was aware that she was his mother. Once he found out, the personal repercussions were disastrous.

28. It might not be an accident then that all Gods who provide food are women (Dimitra) and those who consume it are men (Dionysus). There might be a matriarchic root to this.

The eye opened Goddess Athena belted and
ornamented her
with dresses made of silver

Ζῶσε δὲ καὶ κόσμησε θεὰ γλαυκῶπις Ἀθήνη
ἀργυρέῃ ἐσθῆτι
[Theogony 573-574]

Athena dressed her with silver clothes and ornaments. Here we have Hesiod's reference to the use of silver to make dresses and ornaments. In other words, it relates to the Silver Race. Actually, the word Ζῶσε in Hesiod's time can be translated as "underwear", a cloth around the waste which covered the genitals, which was an additional element to make her attractive to men. The word ἐσθῆτι can be translated as "dress" or "dressing her up". However, the key word for our analysis here is "silver". Thus, Pandora lives in the age that silver was used to produce ornaments, underwear and dresses. Some people might argue against how a dress can be made of metal, but this appears in other ancient descriptions as well. For example, Talos in Greek mythology was a giant which appears to be dressed up with something that would look like a robot today made of bronze. His clothes were metallic.

During the Silver Race, gold is also used to make jewelry because as Hesiod states, Athena prepared Pandora to be sent to humans as follows:

Around her head she put a golden chaplet ἀμφὶ δὲ οἱ στεφάνην χρυσεὴν κεφαλῆφιν ἔθηκε
[Theogony, 578]

And in *Works and Days* Hesiod states that the Goddesses:

... put a golden necklace on her ... ὄρμους χρυσείους ἔθεσαν χρῶϊ [74]

Hesiod continues applying his method of the co-existence of good and bad by saying a line that looks at first as an oxymoronic statement for someone who does not understand Hesiod's method of economic history. There is a line in *Theogony* that is difficult to explain if Hesiod's method of economic history is not taken into account. Hesiod states that:

After this, a good and bad was created by gods Ἀὐτὰρ ἐπεὶ δὴ τεύξε καλὸν κακὸν ἀντ' ἀγαθοῖο
[Theogony, 578]

The translation is really very difficult. Hesiod states that Gods created (τεύξε) a woman who is both good and bad (καλὸν κακὸν). This is easily explained because Pandora brings many disasters to the human race, but brings hope which is her good side. This is in addition to the (sexual) pleasure. The last two words of the line are difficult to interpret. The word ἀντ' (ἀντί) means "against" and the word ἀγαθοῖο in archaic Greek meant "those people who were good in terms of their aristocratic or godly origin". One interpretation might be that Hesiod wanted to stress that Pandora was an amalgam of bad and good and this was against her parentage (creators) who were Gods, and as such, she cannot be all bad. This might explain the oxymoron of the phrase.

Pandora's myth can be interpreted many ways. Hesiod, following the long tradition of myths, makes women the villain. Women bring all the misfortunes to the human race and this is everywhere in Hesiod's works. However, I have a different interpretation and a different reading of Hesiod's works, including the Pandora's myth. Her story shows that it was not a woman's fault for the current suffering of the human race. Pandora was not the one that brought the catastrophe; she was only the messenger. She was the Cyrix. Gods (men and women) made her so that she can deceive men. It was a man's fault who accepted the present.

Hesiod mentions Epimetheus, who was the stupid man to accept a present from Gods, even though he was warned by his brother Prometheus. Can we then assume that Epimetheus was one of the stupid boys of the Silver Race? After Pandora opened the jar and all the diseases spread all over the world, why would Pandora put the lid of the jar back again, keeping hope safely inside so that people can use it in the future? Thus, hope was retained because of a woman. Can we then conclude that women are the future of the human race because men (a) are foolish and accept everything that appears sexually attractive, but not necessarily good and (b) are easily distracted by the presence of a beautiful woman? Hesiod says that this was Zeus' will, but made Pandora to keep hope alive presumably because he did not trust men. A man (Prometheus) betrayed Zeus in the first place. My interpretation here is in contrast and antithesis to all those who see Pandora's myth as anti-feminist or as devaluing women. As is obvious from my analysis above that I interpret it in an opposite and contrary way than what Harrison (1908) stated in her influential book on this issue.²⁹

Chronologically, the myth of Pandora follows the myth of Prometheus. We can then assume that the latter occurred during the end of the Golden Race and the former instigated the Silver Race. As is the case with the Golden Race, it is really very difficult to say more on the Silver Race which can relate to the actual practical use of the two metals. It is a matter of how one reads Hesiod, but my own interpretation is that he wanted to signify something about their production methods and the role of scarcity. This becomes clearer with the Bronze Race which is examined in the next section of this paper.

29. J. E. Harrison, *Prolegomena to the Study of Greek Religion* (London: Cambridge University Press, 1908).

Bronze (Copper) Race and the Age of Heroes

The Greek language does not distinguish between copper and bronze. Most probably, by copper (χαλκός) they meant an alloy of copper and tin. However, the word "copper" was used to mean more than that. It also meant anything that had to do with metals which could include iron as well. However, Hesiod is clear on this and separates the copper from iron.

From this race on, Hesiod's description becomes similar to a modern economic historian. Clough and Rapp distinguished the age of copper in terms of four innovations; the most important of which was the working and the production of items made of copper. They also mention three more developments: (a) the growth of trade (b) a greater division of labor and (c) new and bigger settlements.³⁰ In one way or another, all three include wars in order to conquer new places to solve the scarcity problem. In the area of Greece, this period is identified with the Minoan Civilization. This is the Chalcolithic era as opposed to the Paleolithic or Neolithic eras that preceded it.

Hesiod, as a good textbook writer of economic history, mentions that this period is characterized by the extensive use of copper. In two verses, Hesiod describes this period as:

They had bronze weapons, bronze houses They work the bronze; the black iron was not known	ὤν δ' ἦν χάλκεα μὲν τεύχεα, χάλκεοι δὲ τε οἴκοι χαλκῶ δ' εἰργάζοντο• μέλας δ' οὐκ ἔσκε σίδηρος [150-151]
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Hesiod distinguishes the people of this race from the previous one. However, he does not make any comparisons (either as being better or worse), but simply that they were different from the Silver Race. He states:

In nothing similar to silver	οὐκ ἀργυρέῳ οὐδὲν ὅμοιον [144]
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This does not say anything as to whether Hesiod considered this race worse than the Silver Race. This is important to our analysis here because it will show whether Hesiod was a pessimist (accepted regress or degeneration) or an optimist (believed in progress of human development). It can be inferred though that Hesiod considered this race superior to the Silver Race for a number of reasons.

Firstly, contrary to what Hesiod thought about the men of the Silver Race (foolish and childish), the men of the Bronze Race are:

respectful and strong	δεινόν τε καὶ ὄβριμον [145]
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30. S. B. Clough, and R. T. Rapp. *European Economic History: The Economic Development of Western Civilization* (New York: McGraw-Hill, 1975).

The word *δεινόν* comes from the word *δέος*, which can mean “awesome”, but “respect” as well. Thus, the men of the Bronze Race attracted respect unlike the men of the Silver Race.

Secondly, Hesiod refers to the creation of the Bronze Race, using the same adjective as the one for the Golden Race. He states:

And the Father Zeus another the third race of eloquent people of bronze created Ζεὺς δὲ πατὴρ τρίτον ἄλλο γένος μερόπων ἀνθρώπων χάλκειον ποίησε [143-144]

The word *μερόπων*, which means “people with a good ability to speak” is used to describe the Golden Race and the Iron Race, as explained below. Thus, we may conclude that Hesiod considered this race more eloquent than the Silver Race.

Thirdly, this race is the first that Zeus made. We do not know who made the people of the Golden and Silver Race, apart from knowing that both were made by those Gods who dwell in Olympus. However, Hesiod counts this as the third race that Zeus created, even though the first two were created during the Reign of Cronus, Zeus’ father.

Thirdly, Hesiod refers to the men of this race very positively as:

Having a brave heart from diamond ἀδάμαντος ἔχον κρατερόφρονα θυμόν [147]

The word diamond here is a translation of the word *ἀδάμαντος*, which in Modern Greek means an “excellent character”. Here it does not relate to the metal of diamond which was not yet known. However, the word refers to a hard metal which was an alloy of iron. Anyway, the word most probably has a positive connotation which is definitely the case of the other word, that of *κρατερόφρονα*, which literal speaking means “brave mind”. The word *θυμόν* is translated as “heart”, but it can mean soul, especially in Archaic Greek. These notes are very important because the meaning changes. Brave heart means strong men. However, if soul is used, it can be interpreted as meaning “good people”.

Thus, we know that during the Bronze Race people know and use all metals with the exception of iron. They also know another metal, which, most probably, is not used because it is expensive (scarce).

People of the Bronze Race like wars. In other words, they like trade because this is the only way a war can be financed. Hesiod states that this race cares for the works of Ares (the God of wars):

They cared for the heartbreaking and violent works of Ares οἷσιν Ἄρηος ἔργ' ἔμελεν σπονόμεντα καὶ ὕβριες [145-146]

Hesiod states that they died fighting each other even though they were *ἐκπάγλους* [154], which means “awesome”, which may have a bad or a good connotation. My interpretation is that Hesiod meant it in a good sense because he

wanted to contrast it with their death. In other words, Hesiod says they died even though they were very good.

In any case, fighting in wars was not considered by Hesiod as a bad thing presumably if it was for a good cause like the one in Thebes and in Troy. Right after discussing the Bronze Race, Hesiod introduces the Heroic Race which he compares favorably to the Bronze Race and offers as an explanation the great wars they fought in Thebes and Troy.

After this race was covered by earth	Αὐτὰρ ἐπεὶ καὶ τοῦτο γένος κατὰ γαῖα
Another race, the fourth, on the multi-feeder earth	ἐκάλυψεν,
was created by Zeus the son of Cronus, fairer and warlike	αὐτίς ἔτ' ἄλλο τέταρτον ἐπὶ χθονὶ πουλυβοτείρῃ
the godly race of heroic men, which are called demigods	Ζεὺς Κρονίδης ποίησε, δικαιοτέρον καὶ ἄρειον, ἀνδρῶν ἡρώων θεῖον γένος, οἱ καλέονται ἡμίθεοι [156-160]

The above statement clearly states that the Race of Heroes was superior to the Bronze Race. My impression is that Hesiod considered them even better than the Golden Race. The members of the Golden Race were not considered demigods. They were not considered fairer either. Most probably he considered them luckier, fortunate because they lived in an era of non-scarcity, contrary to all other races which follow them. Thus, I am tempted to assume that this race is better than the Golden Race.

This is reinforced with what happened to the Race of Heroes, the demigods. After they died in Troy and Thebes, they are now living happily in the islands of the blessed with Cronus as their king. Also, he has the same description as of the Golden Race, i.e., ζείδωρος ἄρουρα, because earth provides them with all the food they need:

Zeus, the son of Cronus, put them to live at the edge of earth	Ζεὺς Κρονίδης κατένασσε πατὴρ ἐς πείρατα γαίης.
And they live there carefree	καὶ τοὶ μὲν ναίουσιν ἀκηδέα θυμὸν ἔχοντες
In the island of happy people next to the deep Ocean	ἐν μακάρων νήσοισι παρ' Ὀκεανὸν βαθυδίνην,
Wealthy heroes, who honeyed products three times a year the gifts of life provided by arable land	ὄλβιοι ἦρωες, τοῖσιν μελιηδέα καρπὸν τρις ἔτεος θάλλοντα φέρει ζείδωρος ἄρουρα. [168-171]

It seems to me that this race was considered as being better than the Golden Race if both lives (the mortal on earth and the immortal on earth or under it) are taken into consideration. And if this is the case, the ranking of races is completely different from what one might have initially thought.

Iron and Post-Iron Race

Most archeological and ethnological evidence of pre-historic Greece shows that the Bronze Age ended in the late 2nd millennium BCE and a new period of the Iron Race began. The starting point can be set at the 12th century BCE. Hesiod was born during the Iron Race, but his analysis of this race is put in the future tense. And of course, not much is said about the Post-Iron Race apart from that he considered or hoped it to be better than the current Iron Race. Thus, Hesiod himself does not really know how this race will evolve. However, in one line puts all his optimism about the future of humanity. He states:

I wish I was never among the fifth race of men, but I had died before or born after	μηκέτ' ἔπειτ' ὄφελον ἐγὼ πέμπτοισι μετεῖναι ἀνδράσιν, ἀλλ' ἢ πρόσθε θανεῖν ἢ ἔπειτα γενέσθαι. [174-175]
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The above statement shows that Hesiod did not consider this the best race, but it is not clear in which race of the past he would have liked to live. However, the word *πρόσθε* might mean either “the previous one” or generally, any previous race before. This leaves open the interpretation, which is important for those who debate the issues of Hesiod’s optimism or pessimism. Those who argue that Hesiod believed in the degeneration of the races, which is reflected by the metaphorical use of metals, would have had a hard time explaining what Hesiod meant by his wish to have been born after the current Iron Race (*ἔπειτα γενέσθαι*). I interpret this as follows: Hesiod strongly believed in a better future, which is consistent with his didactic purpose of his book. In other words, he believed that if people follow certain rules, outlined in his book, then the future will be brighter. Why? According to Hesiod, the Iron Race includes both good and bad things:

But even for them there is a mixture of bad and goods	ἀλλ' ἔμπης καὶ τοῖσι μεμείξεται ἐσθλὰ κακοῖσιν [179]
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Hesiod spends 21 lines to explain what bad things the Iron Race will bring [181-201] and not a single line about the goods. However, what follows is the depiction of the expected cruelties of the Iron Race in a long fable of the “Hawk and the Nightingale”, which has only one interpretation: human progress (economic growth) is at the hands of men and women.³¹ Or, to use Vere Gordon Childe’s title of his well-known 1939 book: *Man Makes Himself*. Hesiod, as a good economist, and after examining the historical developments from the good old days of the Golden Race down to his own period of the Iron Race, starts examining what the conditions are to avoid the dreadful prospects of the Iron Race and set the pace for a virtuous cycle of progress and economic growth. Thus, I consider Hesiod

31. Hesiod put a lot of emphasis on the role of good women, equally important as good men.

not only an optimist, but a pragmatist. As in Thucydides three centuries later, Hesiod believed that humanity can learn from their past mistakes and undertake those (economic) actions, which will promote economic progress and growth, pretty much just as most economic historians define the subject of economic history.

Hesiod believed in the men and women of the Iron Race. He refers to them as eloquent people:

Zeus will destroy and this race of eloquent
people

Ζεὺς δ' ὀλέσει καὶ τοῦτο γένος μερόπων
ἀνθρώπων [180]

A number of comments should be made. Hesiod makes this conditional on a number of things and gives a number of warning signs. It is not important to analyze the list of the bad things that would happen, but to state that all these can be avoided if people change their behavior from unethical to an ethical one. Using his superb imagination, he outlines some of the vices of this race which are between us today since we are still living in the Iron Race. Or more general it is the part of human nature which can be only constrained by the rule of law. This is a nice introduction to what it follows, i.e., the fable of the "Hawk and the Nightingale", which teaches the lawgivers that they should be fair if they want their society to flourish. Otherwise, the rule of law will be the law of the strongest and this way one will destroy the city of the other:

The law in their hands; one will destroy the city
of the other

Χειροδίκαι· ἕτερος δ' ἑτέρου πόλιν ἔξαλαπάξει
[189]

However, if humans kill each other, the Gods (Zeus) are not to blame because they will be self-destroyed. Isn't this the case today? Humanity has developed the means of its own complete destruction. No God is needed; unless one assumes that God send those humans to invent the tools of mass destruction. They are the modern Pandora, but it is still up to the men (and women) to use these tools, e.g., for a good cause such as producing cheap and clean electricity, or bad such as making weapons of mass destruction. This brings us back to the previous argument of Prometheus and Epimetheus.

Hesiod sketches a number of other vices of this Iron Race, which are so relevant to today's society, and to that extent, to any society because it is in human nature. The only difference is the means by which these manifest themselves. For example, the bad and good exist in all humans, but whether one overpowers the other depends on the personality of each individual. It is these social codes of the Iron Race that Hesiod wants to reinforce. What is important to note that for all these vices of the Iron Race, Hesiod uses future tense. They do not exist during Hesiod's time, but they will happen in the future.

Hesiod's Six Races Compared

This section compares the six races of Hesiod's economic history of human development. Economic history examines the past. The various stages of economic history developments are organized in terms of few millenniums while economic growth uses data from the past few years, i.e., a century at the most. In other words, it is not really clear where one can draw the line between economic history and economic growth analyses; both use the past. Cliometrics might be one way of integrating the two, but data do not exist for the deep past of human development.

Table 1 presents the six races of Hesiod's organization of economic history. Hesiod mentions six stages in his *Work and Days*, but some important information is missing as shown in Table 1.

Table 1. Comparison of the Six Stages of Hesiod's Historical Ages (or Stages or Races)

	Stage	Dates	Creation	Comparison	Eschatology
1	Gold	Pre-10000 BCE	Olympian Gods but it is not clear by whom. They lived during the era of Cronus, the father of Dias.	The best of all (?)	Not clear
2	Silver	Pre-10000 BCE	Olympian Gods but it is not clear by whom.	Much worse Πολύ Χειρότερον [127] Second Δεύτεροι [142]	Dias destroyed them
3	Copper	10000-1200 BCE	Zeus (Dias)	Nothing similar to silver οὐκ ἀργυρέω οὐδὲν ὅμοιον [144] but not knowing if it is better or worse	They killed themselves in wars
4	Heroic (Copper)	1200-1000 BCE	Zeus (Dias)	Second to Golden Race or better (?)	They killed themselves in wars
5	Iron	Post 1200 BCE-Present	Zeus (Dias)	Worse of all, past and future.	Not known (climate catastrophe, self-destruction using weapons of mass destruction)
6	Post-Iron	Not Known	Not Known	Better than the Iron Age, but not clear how it compares with the previous to the iron race	Not Known (climate catastrophe, self-destruction using weapons of mass destruction)

One of the discussions in the relevant literature is whether Hesiod was a pessimist or an optimist? Did he believe in progress or in regress of the long economic development process? Most authors consider him a pessimist, ignoring his most important statement that he wished he was born after his (iron) times. Why would he want that if he did not believe that the next stage of human development would not be better? In addition, even in his own Iron Age he does not dismiss it, but leaves a window or an entire door open to hope. According to Hesiod, the iron stage is a mixture of good (pleasure) and bad (pain), but he does

not mention whether the sum of the pluses and minuses is positive or negative. My interpretation is that Hesiod believed that overall, the positives can cancel out the negatives if people, including his brother Perses, follow what Hesiod suggested in his book. After all, why would someone write a didactic book and suggest a change in individual human behavior at all levels of authority if he did not believe that this was for their betterment? Human development can be progressive only if people follow certain rules.

However, believing in the potential of human development does not imply that this development would be a smooth (linear) one. It is obvious from Table 1 that Hesiod did not believe in a linear trend of human development, but in very long oscillations that could last for millennia. Hesiod does not mention dates in his theory of economic history, not even for his own time, but we know that he calls his era the Iron Race. The other event mentioned that gives an idea of the historical timeline is that he mentions the Trojan War. These two dates are reported in the table and the others are filled in using archaeological evidence. This gives a sense of what Hesiod was talking about. His evidence came only from his own period. All other information had to be retrieved from what myths and stories have survived orally because no written source is ever mentioned by Hesiod.

Hesiod believed that there is no linear trend in development, but only cycles. He also believed that every race was a mixture of fortunate and unfortunate situations, sent by Gods and nature (?), but human actions can take care of them. It is true that he considers the Golden Race as the best, but what about the silver and the heroes' race? How do they compare? Similarly, how do the bronze and the iron race compare to each other? Which race is better? It seems to me that Hesiod considers the iron better than the bronze race. If this is the case, the five races not only are not linearly regressing, but they oscillate. It is not clear whether the overall trend is upward or downward. One would tend to accept that there exists a long upward trend, even though with large oscillations as a result of wars, plagues, famines, etc. Isn't this the actual economic history of the world since Hesiod's years? Very few economic historians would answer in the negative to this question.

Related to this question of the long trend of human development is the use of the four metals to describe four races of human development or five if the sixth one is counted. Are these simply an allegorical identification of the four races in terms of the prevailed morality in each stage, or do they have an economic interpretation? If there is an economic interpretation, what is it and how does it relate to the progress-regress dichotomy? It is evident that Hesiod means more than a moral standard by using the metals because the Bronze Race is described by the use of the metal to make weapons and houses, but most importantly to work with copper (*χαλκῶ δ' εἰργάζοντο*) because people did not know black iron (*μέλας δ' οὐκ ἔσκε σίδηρος*), in which case it would have been used.

This description shows clearly that at least for these two races of human development, Hesiod identifies them with the economic use of the two metals,

i.e., to produce goods instead of allegorically defining some type of ethical and moral behavior. However, this is not clear for the other two stages of gold and silver. It would be absurd to state that Hesiod named the Bronze and the Iron Race from the use of the two metals in the production process and the first two, gold and silver, because he wanted to relate them to the characteristic morals of these two races. It is safe to assume that Hesiod named the first two stages from the use of the metals, assuming as many other scholars did and do, that the first people used (discovered) gold and then silver. However, even if someone insists on the moral explanation, Hesiod knew that gold was more valuable than silver and this could only be evaluated if there was an exchange value for the two metals. After all, the whole myth, if it was a myth, of the Argonauts going to Colchis was about the Golden Fleece. So gold was considered valuable some time before the Minoan Civilization and people would risk a long trip to get it. Colchis, located in modern western Georgia in the Black Sea, was rich in gold and iron.

In conclusion, Hesiod was on a mission. He wanted to change his society. He wanted to make it better by writing a didactic book. *Works and Days* was such a book. He believed that society can be changed by human actions given the constraints imposed by Gods (nature). Therefore, he was very critical of the behavior of his fellow citizens, including the archons who were corrupt. He condemned all the social wrong-doings such as bribery, theft, idleness, laziness, beggary, adultery, etc. which of course exists in all, past and modern, societies as well. However, he believed in justice and well-organized societies and this made him optimistic and hopeful. After all this is one reading of the myth of Pandora's Box. Humanity can hope. Hope for what? Of course, hope that the human destiny can become better. This is progress and not regress. Hesiod believed in progress which can come only by appropriate human behaviors with the most important being honest work and fair competition. Otherwise, he would never have written a didactic book if he did not believe that human behavior could not be reoriented towards progress.

Conclusions

The analysis of this paper shows that there are some basic testable hypotheses of Hesiod's theory of economic history (human development) that I use them to conclude the paper and orient future research on this important economic historian. These are:

- a) At a certain stage of human development people went from being food gatherers to becoming food producers, or at a certain stage of human development, the abundance (automatic provision) of earth's goods run out and for the first time in history the means of living became scarce.

- b) Prometheus' myth shows that in any human race there are very few people who can benefit the entire human race by finding new ways of producing goods and services.
- c) After the initial stage of the Golden Race, all other races of human development, past and future, will be a mixture of fortunate (virtues) and unfortunate (vices) elements.
- d) Human development (the future of the current Iron Race or the post-Iron Race) can be better or worse depending on human behavior. Gods or nature cannot be blamed.
- e) The process of human development is not linear, but each race will have its own mixture of negatives and positives.
- f) Long periods of progress are followed by long periods of regress.
- g) Each period is characterized by its own unique characteristics which are related to the use of metals (technology) in the production process.
- h) Peace and justice are an integral part of progress, or what economists call economic growth.

The above Hesiod's Hypotheses of his theory of economic history can be verified by empirical evidence, which can be provided by archaeologists, anthropologists and ethnologists. Hard economic evidence (quantitative evidence) has not survived for all of Hesiod's historical human races. The first hypothesis of the Golden Age has been examined and there is evidence of nomadic living before 10,000 BCE. People were food gatherers. Now for some reasons they became food producers. The most important reason is population growth which created scarcity of the means of production, forcing people to innovate. This is a good explanation, but not very persuasive. I prefer Hesiod's story which reverses the causality and is related to exogenous versus the endogenous technical progress. Both can exist. However, my own fable or myth or story is as follows. The first human race consisted of people without education and previous knowledge. Thus, the endogenous technical progress is ruled out. We are left only with exogenous technical progress which can be the result of good luck (i.e., the discovery of fire or of a nice sharp stone object which nature made), the birth of a talented individual (you need only one), or a combination of both. Talented people are usually lucky. Good luck is part of one's talent. One such talented individual noticed that some animals can be domesticated and live with them in the same cave and therefore reproduce them. Instead of going hunting for them during the cold and rainy days of winter he can have his own milk and meat right in his backyard. This innovation reduces the risk of not finding food and the extra toil of hunting. Similarly, another talented individual noticed that some seeds that fell on the ground were able to reproduce themselves. All is required for such acquisition of knowledge is the talent of observing and thinking. This still makes a good scientist today. There is no substitute for talent, with or without education. Once people reduced the risk of finding food, then they can propagate their kind at higher rates. This increases

population and therefore intensifies the scarcity problem which in turn makes new technology or wars the only way out. Technology is preferred because it increases further population, but war solves the problem by reducing population. Hesiod's Prometheus myth describes the above sequence of events.

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